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REMARKS

Applicants have amended claims 112, 114, 120, 121, 132, 135, 146, 156, 159, 167, 170, 176 and 213-217, and have added new Claims 234-307. Care has been taken to avoid the introduction of new matter. Claims 104-112, 114-133, 135-157, 159-186, 191-194, 199-202 and 207-307 are presently pending in this application.

Applicants would like to thank Examiner Ralph Lewis for his thorough search and review of the prior-art, his careful consideration and examination of the present application and claims, and his indication that claims 104-107, 114, 115, 135, 159, 212, 214 and 216 contain allowable subject matter. In particular, the Examiner appeared to state that claim 104 is allowed and that claims 105-107, 114, 115, 135, 159, 212, 214 and 216 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims, and further upon the filing of a Terminal Disclaimer. Applicants have rewritten claim 214 to include the subject matter of claim 121 and have rewritten claim 216 to include the subject matter of claim 146, and thus submit that these claims are allowable. Moreover, Applicants have added new claims 234-307, the recitations of which are neither disclosed nor suggested by the prior art of record.

The Office Action required a new Declaration for Patent Application, which Applicants, while traversing the requirement, have submitted herewith.

The Office Action rejected claims 112, 120, 130, 141, 146, 154, 165 and 178 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim subject matter which Applicants regard as the invention. In response, Applicants have implemented amendments to address the 35 U.S.C. 112 concerns. Regarding the Examiner's statement that "LED's produce polychromatic light (page 5, lines 6 and 7), not monochromatic light as claimed," Applicants respectfully submit that it was and continues to be well known in the art that LED's can produce monochromatic light as well. In any event, Applicants' specification states in lines 4 and 5 of page 5 that

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"[e]mbodiments of the invention may use any suitable means for generating the electromagnetic radiation" (emphasis added). Examples of the means are stated in lines 5 and 6 of that same page as including embodiments "such as a semiconductor laser that generates monochromatic electromagnetic radiation or a light emitting diode that emits polychromatic electromagnetic radiation" (emphasis added). Moreover, in addition to it having been and being known in the art that LED's can produce monochromatic light, it was and continues to be known in the art that semiconductor LED's can be used to produce monochromatic light. The Office Action even states on page 2 that "an LED is a 'source of electromagnetic radiation.'" Regarding claim 154, it further narrows the language "a light emitting diode or other source of electromagnetic radiation" of the parent claim to a light emitting diode. In view of the preceding, Applicants request that the Examiner reconsider and withdraw the rejection of claims 112, 120, 130, 141, 146, 154, 165 and 178 under 35 U.S.C. 112, second paragraph.

The Office Action further rejected claims 104-112, 114-133, 135-157, 159-186, 191-194, 199-202 and 207-233 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 6,616,451. In response, Applicants have submitted herewith a Terminal Disclaimer and thus request that the Examiner reconsider and withdraw the obviousness-type double patenting rejection.

Rejections Under 35 U.S.C. § 102

The Office Action rejected a large number of claims under 35 U.S.C. 102(b) as allegedly being anticipated by Levy (U.S. Patent No. 5,306,143), and also rejected claims under 35 U.S.C. 102(a) as allegedly being anticipated by Polaert et al. (WO 97/01298). Applicants respectfully traverse these rejections as they relate to the claims even before the present amendment but especially after the entering of this amendment.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference" (emphasis added;

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Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). Thus, for a rejection under 35 U.S.C. 102 to be proper, every limitation recited in a claim, which is rejected as being anticipated by a prior-art reference, must be clearly disclosed in that single prior-art reference. In the instant case, Applicants respectfully submit that neither of the cited Levy and Polaert et al. references discloses each and every limitation that is recited in the rejected claims as amended, and, therefore, neither Levy nor Polaert et al. anticipates the claims under 35 U.S.C. § 102.

Applying the above standard, Levy and Polaert et al. do not disclose a cleaning system for teeth as set forth in independent, amended claim 121, including, among other things, “a toothbrush ... to direct electromagnetic radiation toward the cleaning surface, wherein the electromagnetic radiation is at least substantially free of ultraviolet radiation; and a ... photosensitive agent, which is dispersed throughout the dentifrice and which is reactive to at least one wavelength of the electromagnetic radiation, wherein during use the dentifrice ... has a transparency sufficient to transmit the electromagnetic radiation, whereby a significant portion of the dispersed photosensitive agent over the target surface receives the electromagnetic radiation ... thus enabling the significant portion of the dispersed photosensitive agent to react with the at least one wavelength of the electromagnetic radiation for impartation by the photosensitive agent of an effect on the teeth.” (Emphasis added.)

Nor do Levy or Polaert et al. disclose a teeth cleaning system, including, among other things, “a dentifrice comprising a photosensitive agent that reacts substantially only to electromagnetic radiation within a predetermined range ...[having] a transparency sufficient to transmit the electromagnetic radiation, whereby a significant portion of the dispersed photosensitive agent over the target surface receives the electromagnetic radiation during use of the system, thus enabling a reaction between the significant portion of the dispersed photosensitive agent and the electromagnetic radiation within the predetermined range to impart an effect on the teeth; and ... a toothbrush ... constructed to direct electromagnetic radiation toward the cleaning surface, wherein the electromagnetic

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radiation is bound to wavelengths that are substantially within the predetermined range” (emphasis added), as recited in independent, amended claim 146.

Furthermore, the method steps recited in, for example, independent, amended claim 170, including, among other things, “providing ... a photosensitive agent that is reactive to at least one wavelength of electromagnetic radiation ... providing an electromagnetic radiation emitting toothbrush that is configured to emit the at least one wavelength of electromagnetic radiation ... activating the electromagnetic radiation emitting toothbrush such that the electromagnetic radiation emitting toothbrush emits electromagnetic radiation of one or more wavelengths including the at least one wavelength and consisting essentially of non-ultraviolet radiation during brushing of teeth; and ... the photosensitive agent reacting to the at least one wavelength of electromagnetic radiation to impart an effect on the teeth” (emphasis added), are not disclosed by Levy or Polaert et al.

Thus, the presently pending independent claims, and the claims dependent thereon, are not anticipated by Levy or Polaert et al. Applicants respectfully request that the Examiner reconsider and withdraw the rejections based upon 35 U.S.C. § 102(b).

Rejections Under 35 U.S.C. § 103

The Office Action further rejected various claims under 35 U.S.C. 103(a) as allegedly being unpatentable over Polaert et al. (WO 97/01298), Feldman (U.S. Patent No. 5,160,194), Levy (U.S. Patent No. 5,306,143), Yarborough (U.S. Patent No. 5,645,428) and Cipolla (U.S. Patent No. 5,879,159). Applicants respectfully traverse these rejections as they relate to the claims even before the present amendment but especially after the entering of this amendment.

Independent claims 121, 146 and 170 have been amended. As set forth herein, Applicants respectfully traverse the obviousness rejections as they relate to the presently pending amended claims. For example, on the topic of seemingly objectionable language

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accompanying the 35 U.S.C. 103(a) rejection, as just one example, page 6 of the Office Action stated that "the maximizing of the efficiency of the light delivery ... by making the paste/gel clear would have been obvious to one of ordinary skill in the art," but did not provide, among other things, any suggestion within the prior art as to why one skilled in the art would have, for example, (1) perceived a need to enhance light delivery in the context of the system of Polaert et al., (2) been motivated to modify Polaert et al., in particular, to augment its light delivery, and (3) thought to augment the light delivery of Polaert et al. by modifying a transparency of its dentifrice.

In connection with the rejection of independent, amended claim 121, and of independent, amended claims 146 and 170, the combination of recitations of the claim(s) would not have been obvious to one of ordinary skill in the art at the time of the invention in view of the cited references, taken separately or together. In particular, Applicants submit that any plausible permutation or combination of Polaert et al. with any of the other cited references does not even disclose all of the limitations of any of the currently pending claims, such as claim 121, and claims 146 and 170, such that any resulting combination to the extent hypothetically taught and/or feasible still would not meet all of the claimed limitations, and would not have provided the required suggestion or motivation to have rendered any of the present claims obvious to one having ordinary skill in the art at the time of the invention as required by 35 U.S.C. § 103(a).

Regarding the outstanding obviousness rejections, it is well established that a claim can be rejected on obviousness grounds only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior-art reference or combination of prior-art references. Thus, for a rejection under 35 U.S.C. 103(a) to be proper, every limitation recited in a claim, which is rejected as being obvious in view of a combination of prior-art references, must be disclosed or taught in that collection of prior-art references.

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In the instant case, such as, for example, with respect to independent claim 121, and with respect to independent claims 146 and 170, Applicants reiterate that the cited references neither disclose nor suggest each and every element that is recited in any of the rejected claims. For example, none of the relied-upon references for the rejection of claim 121 disclose, teach or suggest, among other things, "the dispersed photosensitive agent ... [reacting] with the at least one wavelength of the electromagnetic radiation for impartation by the photosensitive agent of an effect on the teeth." Also, regarding the rejection of claim 146, none of the relied-upon references for the rejection of that claim disclose, teach or suggest, among other things, "a reaction between the significant portion of the dispersed photosensitive agent and the electromagnetic radiation within the predetermined range to impart an effect on the teeth." Moreover, none of the cited references relied upon in connection with the rejection of claim 170 disclose, teach or suggest, among other things, recitations contained within claim 170, including, among other things, a "photosensitive agent reacting to the at least one wavelength of electromagnetic radiation to impart an effect on the teeth."

Thus, regarding the standard that each and every claimed element must be shown or taught somewhere in the combination of relied-upon references of a rejection, the relied-upon references, taken separately or together, do not appear to disclose or suggest any of Applicants' claimed combinations. Applicants therefore submit that the pending independent claims would not have been obvious at the time of the invention to one of ordinary skill in the art and patentably distinguish over the prior art of record. Moreover, it is respectfully submitted that the pending dependent claims are patentable at least because of their dependence on the mentioned independent claims. Accordingly, it is respectfully submitted that the outstanding rejections under 35 U.S.C. § 103(a) are improper. Applicants respectfully request that the Examiner reconsider and withdraw the rejections based upon 35 U.S.C. § 103(a).

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In view of the above, Applicants submit that the application is now in condition for allowance, and an early indication of same is requested. The Examiner is invited to contact the undersigned with any questions

Respectfully submitted,



Kenton R. Mullins
Attorney for Applicants
Reg. No. 36,331

STOUT, UXA, BUYAN & MULLINS, LLP
4 Venture, Suite 300
Irvine, CA 92618
Telephone: (949) 450-1750
Facsimile: (949) 450-1764
KRM:wc